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METHOD OF OPERATION

Miscellaneous Alarm Signal Circuit O.G.T. Test Board - Panel Machine Switching System.

DEVELOPMENT

1. PURPOSE OF CIRCUIT

- 1.1 This circuit is used to bring in audible and visible signals when a trouble condition or a circuit failure takes place.

2. WORKING LIMITS

- 2.1 None.

OPERATION

3. PRINCIPAL FUNCTIONS

- 3.1 In the event of a trouble condition or circuit failure, to notify the desk switchman or sender monitor promptly of the nature and approximate location of the trouble and of the progress being made to correct it.

4. CONNECTING CIRCUITS

This circuit functions with:

- 4.1 The battery bus bars associated with coin, distributing panel, charge and discharge fuses on battery fuse panel, power board, coin power, emergency lighting, and selector fuse panel or distributing fuse panel showing the greatest variation in voltage.
- 4.2 Special "A" board auxiliary signal and night alarm circuit.
- 4.3 Motor stop and frame busy circuit.
- 4.4 Circuit breakers and rectifiers.
- 4.5 Machine ringing pick-up leads.
- 4.6 Emergency cordless key circuit.
- 4.7 A.C. power supply.

DESCRIPTION OF OPERATION

5. DISTRIBUTING PANEL FUSES (FIG. 11 & 19)

5.1 The operation of a fuse at a battery distributing panel connects exchange battery to the winding of the (A) relay operating the relay. The (A) relay operated, lights a DISTRIBUTING FUSE PANEL lamp at the floor alarm board or power alarm cabinet and another at the trouble desk each in series with an associated (DCH) relay. The (DCH) relays operated, operate a bell at the floor alarm board and a bell at the trouble desk respectively. When the operated fuse is replaced, the (A) relay releases, extinguishing the DISTRIBUTING FUSE PANEL lamps and releasing the (DCH) relays, silencing the bells.

6. CHARGE AND DISCHARGE FUSES (FIG. 7 & 14)

6.1 CHARGE FUSE

The operation of a heavy duty charging fuse at a battery fuse panel connects the winding of the (A) relay to the battery under charge, operating the relay. The (A) relay operated, lights the CHARGING FUSES lamp at the floor alarm board or power alarm cabinet in series with the (AC) relay operating the 43-F subset ringer at the floor alarm board or power alarm cabinet and also lights the Charging Fuses lamp at the trouble desk in series with the (AC) relay, operating a buzzer at the trouble desk.

6.2 DISCHARGE FUSE

The operation of a discharge fuse in a battery distributing panel operates the (A) relay, lighting the floor alarm board or power cabinet and trouble desk DISCHARGE FUSE lamps and performing the functions similar to those described above.

6.3 The replacement of the operated fuse releases the (A) relay extinguishing the lamps and releasing the (AC) relays silencing the ringer and buzzer.

7. SPECIAL "A" BOARD AUXILIARY SIGNAL AND NIGHT ALARM (FIG. 1 & 3)

7.1 When a fuse in a special "A" board section operates, ground from the special "A" board auxiliary signal and night alarm circuit is connected to a designated lamp at the trouble desk in series with the (AC) relay, lighting the lamp and operating the relay in turn operating the trouble desk buzzer. When the operated fuse is replaced, the ground is removed releasing the (AC) relay and extinguishing the lamp at the trouble desk. The (AC) relay released silences the buzzer.

8. CIRCUIT BREAKER ALARM (FIG. 6)

8.1 When a circuit breaker (in the power charging circuit not shown

in this drawing) trips, the (CB) relay is connected to the battery being charged, operating the relay. This relay operated, lights the CIRCUIT BREAKER lamps at the floor alarm board or power alarm cabinet and trouble desk in series with their (AC) relays operating the 43-F subset ringer and the buzzer.

882 When the circuit breaker is closed the (CB) relay releases, extinguishing the lamps and releasing the (AC) relays, silencing the ringer and buzzer.

9. PICK-UP ALARM (FIG. 9)

9.1 If an incoming selector frame pick-up ringing lead becomes grounded between the pick-up lead resistance lamp and the selector frame, the (PU) relay operates in series with the pick-up lead lamp which lights as an indication of the selector group in trouble. The (PU) relay operated, lights PICK-UP alarm lamps at the floor alarm board or power alarm cabinet and at the trouble desk in series with their respective (AC) relays which bring in a bell and buzzer at the alarm board or trouble desk. When the pick-up lead is cleared, the (PU) relay releases, extinguishing the PICK-UP lamps and releasing the (AC) relays, in turn silencing the ringer and buzzer.

10. COIN POWER FAILURE ALARM (FIG. 18)

10.1 POSITIVE COIN BATTERY

When positive coin battery fails, the (\neg CB) relay releases operating the (CBA) relay in series with the floor alarm board or power alarm cabinet (CC \neg) lamp and associated (AC) relay, lighting the lamp and operating the relay. The (AC) relay operated, brings in the alarm board or cabinet ringer. The (CBA) relay operated lights the trouble desk COIN POWER FAILURE lamp and operates the associated (AC) relay bringing in the trouble desk buzzer. When the positive coin battery is restored, the (\neg CB) relay operates, releasing the (CBA) and floor alarm board or power alarm cabinet (AC) relay silencing the ringer and extinguishing the (CC \neg) lamp. The (CBA) relay released, extinguishes the trouble desk COIN POWER FAILURE lamp and releases the (AC) relay, silencing the buzzer.

10.2 NEGATIVE COIN BATTERY

When negative coin battery fails, the (\neg CB) relay releases, operating the (CBA) relay in series with the (CC-1) lamp similar to paragraph 22.1.

11. EMERGENCY "B" SENDER ALARM (FIG. 16)

11.1 If machine switching "B" (cordless) emergency sender equipment is required, a key at the machine switching "B" board is operated, lighting the CORDLESS EM. lamp in series with the (EM) relay,

operating the relay. The (EM) relay operated brings in a bell at the floor alarm board and lights the trouble desk CORDLESS EMERGENCY lamp in series with the (EM) relay, which operates, closing the trouble desk audible alarm circuit.

- 11.2 When the key is released at the cordless position the floor alarm board CORDLESS EM. lamp is extinguished and the (EM) relay is released in turn extinguishing the trouble desk lamp and releasing the (EM) relay opening the trouble desk audible alarm circuit.

12. A.C. POWER FAILURE (FIG. 15)

- 12.1 The failure of one or more phases in the A.C. power leads causes the phase failure device to operate, releasing the (PF) relay. The (PF) relay normal, operates, the (DC) relay, from ground, winding, normal A.C. power phase failure guard key, A.C. POWER FAILURE lamp at the floor alarm board or at the power alarm cabinet, winding of the (DC) relay to battery, lighting the lamp. The (DC) relay operated brings in the floor alarm board or power alarm cabinet bell.

- 12.2 The operation of the phase failure guard key releases the (ACFA) relay and transfers the floor alarm board or power alarm cabinet and trouble desk signals to the front contact of the (ACF) relay extinguishing the lamps and releasing their associated (DC) relays extinguishing the bells. The operate key lights an A.C. POWER FAILURE guard lamp.

- 12.3 When the A.C. service is restored, the phase failure device operates, in turn operating the (PF) relay. With the (ACF) relay and the phase failure guard key operated, the (ACFA) relay is operated, bringing in the alarms as in paragraph 12.1. When the key is restored, the A.C. power failure guard lamp is extinguished and the floor alarm board or power alarm cabinet and trouble desk signals are restored as in paragraph 12.2.

13. EMERGENCY LIGHTING FUSE ALARM (FIG. 12)

- 13.1 If an emergency lighting fuse operates, the (EL) relay releases, closing a circuit to operate the (AC) relay bringing in the trouble desk buzzer.

- 13.2 When the operated emergency lighting fuse has been replaced, the (EL) relay operates, releasing the (ELA) relay, extinguishing the lamps and releasing their associated (AC) relays, in turn silencing the floor alarm board or power alarm cabinet ringer and silencing the trouble desk buzzer.

14. VOLTAGE ALARMS (FIG. 10)

14.1 High Voltage - When the potential across the coils of the Weston voltmeter relay equals 49.9 volts, the (C) and (LC-50) contacts of the voltmeter relay close and the (H) relay operates. The (H) relay operated, operates the (HL) relay in power circuit in series with the HIGH VOLTAGE lamp at the floor alarm board or power alarm cabinet and the winding of the (AC) relay, lighting the lamp and operating the (AC) relay. The (AC) relay operated, operates the ringer at the floor alarm board or power alarm cabinet. The (HL) relay operated, also lights the VOLTAGE LAMP at the trouble desk in series with the (AC) relay. The (AC) relay operated, operates the buzzer at the trouble desk. When the potential drops below 49.9 volts, the (H) relay releases, releasing the (HL) and (AC) relays. The (HL) relay released, extinguishes the lamps and the (AC) relay released, silences the ringer and buzzer.

14.2 Low Voltage - When the potential equals 45.1 volts, contacts (C) and (LC-45) of the voltmeter relay close and the (L) relay operates. The (L) relay operated, operates the (HL) relay in the power circuit in series with the LOW VOLTAGE lamp at the floor alarm board or power alarm cabinet and the winding of the (AC) relay, lighting the lamp and operating the (AC) relay. The (HL) relay operated, lights the trouble desk VOLTAGE LAMP in series with the (AC) relay as in paragraph 31.1. When the potential exceeds 45.1 volts, the (L) relay releases, releasing the (HL) relay, extinguishing the lamps and releasing the (AC) relays, silencing the alarms as in paragraph 31.1.

14.3 The adjustment of the contacts of the Weston 30 Voltmeter relay should be such that when the potential is between the limits of 45.1 and 49.1 volts, the (L) and (H) relays do not operate. Ground is connected to the C arm of the voltmeter relay through the 18-AF resistance to reduce sparking at the contacts.

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